Quantum-Gravity Can Be Recalculated By Refined Time Smaller Than The Planck-Time In A Rotational Double Torus Universe.

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(version 1, November 28 2013 was modified and extended with a neutrino-calculation).:

Abstract.

In particular calculations have been made for the detection of extraterrestrial high energy neutrinos. Additional the rest-energy of a neutrino is calculated (equivalent to its rest mass). But both calculations are not standard. The calculations are made from the perspective of a new model for the universe: The Double Torus hypothesis. The alternative calculation shows that the result matches a neutrino-incident in the ICECUBE-project in Antartica for a value of 250 TeV energy. Moreover, an extra calculation is made for the expected neutrino rest-energy by the Standard Model (equivalent for its rest-mass). This shows time 21 times smaller than the Planck-time can generate a neutrino-rest-energy of 2.2 eV. It also shows time 100 times smaller than the Planck-time can generate a neutrino-rest-energy of 0.1 eV. This delivers evidence for the existence of a sub-quantum-domain of refined time that affects dark vacuum-particles; this is dark matter described in the Double Torus-framework. That generates visible quantum-gravitational particles. Such a calculation could also be performed for an electron or a quark. But that is not (yet) performed in this paper. But one of the conclusions is that the detection of high energy neutrinos could turn out to be additional evidence for the existence of rotational Double Torus Universe.

Introduction.

I used the DAN-energy constant as found in my former papers[1, 2]. This is the twin-light-cone-time-surface at the edge of the quantum- and sub-quantum scale (above and below the Planck-scale). This constant is described in exercises with the dark energy force formula of the Double Torus hypothesis and a formula for entropy-gravity (E. Verlinde, UvA-NL). After a first calculation I theoretically found an energy-density for a dark vacuum-particle of 984 eV per cubical zepto-meter, which is a diameter-scale of 10^{-21} meter. In that calculation I applied the Planck-time-squared to the DAN-energy-constant. This calculation appears to be matching the high energy ratio for neutrinos (the energy-density)! This is matching the experimentally found 250 TeV at the neutrino-incident detected by the ICECUBE neutrino-project in Antartica[3]. I repeated this calculation in this paper. But I also made an additional calculation by my *new found product* 'energy-density x time-surface (quantum and sub-quantum area)', which uses the equations described in this paper and former papers as part of the Double Torus-framework. The additional calculation shows how the dark-vacuum-area can generate the rest-energy of an electron-neutrino (equivalent to its rest-mass). Such calculations can also be performed for the electron and quark. However, that is not yet done in this paper.

Calculations of neutrinos from the perspective of time in the Double torus framework.

After I calculated a value for the energy-density for high energy neutrinos in my former paper[2], I now calculate this value again as a step-up to calculate the neutrino-rest-energy for a factor smaller than the Planck-time .

I am aware, that for values to calculate energy and time above the Planck-time, the energy is given by $Et \geq \frac{1}{4\pi}h$ in the Standard Model. But here in this paper I show how the 'energy-density x time-surface' follows another route to generate its rest-mass (or equivalent rest-energy). That route is described by a new constant, the DAN-energy-constant, which I combined from a rather new energy formula of E. Verlinde (UvA-NL) and my new dark energy force-formula. So the calculations I made are put in perspective of a new proposed model of the universe: A Double Torus Universe.

The calculations are based on my DAN-energy constant, described in paper[2]:

$\pm\frac{4\pi^2}{G}\left[\frac{kg}{m^3}s^2.rad^2\right]$ this is according to equations 4, 5, 6, 7, and 8 of paper[2]. (1)

This can be written as:

$$\left\langle \pm\frac{4\pi^2}{G}\left[\frac{kg}{m^3}\right]\right\rangle.\left\langle \partial t^2{}_{Planck}\left[s^2.rad^2\right]\right\rangle \tag{2}$$

Wherein:

∂ is an integer-factor applied to the Planck-time-squared $t^2{}_{Planck}$, which is a refining time-surface in the sub-quantum domain.

And where the energy-density $\pm\frac{4\pi^2}{G} \cong \pm 54x10^{90}\left[\frac{J}{zeptom^3}\right]$, (3)

which is according to equation 5 of paper[2].

The rule is: The less energy the time-surface contains, the larger the quantum energy-density is. The more energy the time-surface contains, the smaller the quantum energy-density. For time larger than the Planck-time is $(\partial > 1)$. For time smaller than the Planck-time is $(\partial < 1)$. For time is equal to the Planck-time is $(\partial = 1)$. So the energy-density Ω_{qE} of a certain quantum-energy follows as:

$$\Omega_{qE} = \pm\frac{4\pi^2}{G}\partial t^2{}_{Planck}\left[\frac{J}{zeptom^3}s^2 rad^2\right] \tag{4}$$

Conversion from Joule to electron-volt gives:

$$\Omega_{qE} \cong \pm \frac{\frac{4\pi^2}{G}\partial.t^2{}_{Planck}}{1.6x10^{-19}} \left[\frac{eV}{zeptom^3} s^2 rad^2 \right] \tag{5}$$

$$\Omega_{qE} \cong \pm \frac{4\pi^2}{G}\partial.t^2{}_{Planck} \frac{10^{-21}}{1.6x10^{-19}} \left[\frac{eV}{zeptom^3} zeptos^2 rad^2 \right] \tag{6}$$

For $\partial = 1$, which means exactly for the Planck-time, follows:

$$\Omega_{qE} \cong \pm 54x10^{90}x\left(5.4x10^{-44}\right)^2 \frac{10^{-21}}{1.6x10^{-19}} \cong 984 \left[\frac{eV}{zeptom^3} zeptos^2 rad^2 \right] \tag{7}$$

This can be converted to an equivalent energy-density as follows:

$$\Omega_{qE} \cong \pm \frac{984x\frac{1}{1.9839}x10^{12}}{1.9839x10^{-9}} \cong \pm 250 \left[\frac{TeV}{nm^3} zeptos^2 rad^2 \right] \tag{8}$$

The value with the '+' sign is known in the Standard Model. This produces a positive energy-density. The '-' sign is a typical Double Torus solution and stands for expanding energy-density (anti-gravitational).

However, this value matches the neutrino high energy-density, which is found in the ICECUBE-project in Antartica[3].

So I have given evidence here for high-energy neutrinos that can be calculated by an equation which is part of the Double Torus hypothesis for the universe. That makes my hypothesis stronger after all the other mentioned arguments in the former papers [1,2] . The Big Bang cosmology no longer can be maintained as a model for the Universe.

I show that dark vacuum-particles can generate the high energy neutrinos by using time equal to the Planck-time. That clearly means that high energy neutrinos can escape from the surface of a Planck hole or a larger black hole in terms of Big bang cosmology. This changes the idea of thermic radiation of black holes. Black holes loose mass by radiating high energy neutrinos. This becomes easier when they are smaller, because they get hotter (according to S. Hawking black holes radiate thermic radiation, 1974).

This brings me to calculate a value for time at which the rest-energy of the electron-neutrino is produced.

The neutrino rest-energy is theoretically estimated in the Standard Model smaller than 2.2 eV.

So after substitution of $\Omega_{qE} \cong 2.2$ in the equation follows:

$$\pm\frac{4\pi^2}{G}\partial.t^2{}_{Planck}\frac{10^{-21}}{1.6x10^{-19}}\cong 2.2\left[\frac{eV}{zeptom^3}zeptos^2rad^2\right] \tag{9}$$

Now ∂ can be calculated:

$$\pm 54x10^{90}x\partial\left(5.4x10^{-44}\right)^2\frac{10^{-21}}{1.6x10^{-19}}\cong\pm 2.2\left[\frac{eV}{zeptom^3}zeptos^2rad^2\right] \tag{10}$$

$$\partial\cong\frac{2.2x1.6x10^{-19}x10^{21}}{\pm 54x10^{90}x\left(5.4x10^{-44}\right)^2}\cong\pm 0,0022 \tag{11}$$

Again here the ± sign may be confusing, but that is far from the case. The reason is: the energy-density in the formula can be gravitational as well as anti-gravitational. So a high energy neutrino could be generated as quantum-gravitational energy, or as quantum-expansion energy. The latter is the '-' sign. So when a high energy neutrino is generated than the time-surface is + 0,0022 times smaller than the Planck-time. The result is a positive energy-density. But it gives evidence for the existence of a sub-quantum-time as follows:

$$\left(22x10^{-4}\right)^{\frac{1}{2}}x5.4x10^{-44}\cong 0.25x10^{-44}\left[s^2rad^2\right] \tag{12}$$

Roughly $\cong\frac{5.4}{0.25}\cong 21$ times smaller than the Planck-time. (13)

But for a value smaller than 2.2 eV, for example 0.0984 eV ≈ 0.1 eV follows for equation (11):

$$\partial\cong\frac{0.0984x1.6x10^{-19}x10^{21}}{\pm 54x10^{90}x\left(5.4x10^{-44}\right)^2}\cong\pm 0.0001 \tag{14}$$

$$\left(1x10^{-4}\right)^{\frac{1}{2}}x5.4x10^{-44}\cong 5.4x10^{-2}x10^{-44}\left[s^2rad^2\right] \tag{15}$$

Roughly $\cong\frac{5.4}{5.4x10^{-2}}\cong 100$ times smaller than the Planck-time. (16)

Both values are ***below*** the event-surface of a black hole in terms of Big Bang-cosmology. However, this calculation is made in a new framework, called the Double Torus hypothesis for the universe, where these calculations are a regular process to take place at the outer-edge of the inner dark matter torus that is surrounded and intertwined by a refined four times larger time torus. This leads to the following conclusions:

1. In terms of Big Bang cosmology the source of the extraterrestrial high energy neutrinos in the ICECUBE project in Antartica could be attached to the surface of a rather small black hole somewhere towards the CMB. These black holes are old and thus small. Such a

type of neutrinos escapes easier from small black holes than from large black holes. This delivers larger amounts of high energy neutrinos and thus more chance to detect. So that is also the way a black hole loses mass. But that would mean it also appears that thermic radiation could be hot neutrinos instead of thermic radiation ! That would be completely new !!

2. Another thing is: The rest-mass, in this case the equivalent neutrino rest-energy, appears to escape from below the event-surface of a black hole, because of time smaller than the Planck-time. That means the existence of a layer of quantum-gravity and thus a fuzzy event-surface of a black hole.
3. On the other hand: In terms of a Double Torus cosmology the inner dark matter torus radiates high energy neutrinos and thus produces quantum-gravity at the outer-edge of the inner dark matter torus, which is surrounded and intertwined by a four times larger time-energy-torus. In a same way this could generate electrons and quarks to form a visible layer of visible matter, which generates a rotational torus-shaped light-band of visible world. I think that is the case, because other evidence is at hand for a rotational universe, such as a CMB-dipole, an alpha-dipole, a dark flow and a calculation of the smallest Newton-acceleration that matches experiments.
4. A main issue is: My DAN-energy posits a new constant to cover closely the Planck-scale in a sort of sub-quantum-layer. My equations and calculations used, are holographic based, because I used an equation for entropy-gravity (E. Verlinde (UvA-NL), which in turn partially is derived from the Holographic Principle. My conclusion from that is a dark vacuum-particle (dark matter) could be considered equivalent to a layered event-surface of a black hole related to current Big bang cosmology on one hand, and on the other hand it shows me that layer is at the outide-edge of the inner dark matter torus of the Double Torus cosmology. In terms of Big Bang-cosmology, deeper inwards the black hole-domain, time is becoming increasingly refined. Contrarily space is becoming increasingly rare in that area. So, I have the idea the area behind the event horizon of a black hole (inwards) is just nothing more than a refined time-sphere. So taking these two aspects into account (the implicitly of the holographic aspect and the calculation at the outside-edge of a dark matter-layer) it means the detection of the high energy neutrinos could be evidence for a rotational direction of the dark matter torus towards the observer! So, that could mean the ICECUBE-project in Antartica discovered the rotation of the universe ! Additional to the discovery of a CMB-dipole, an Alpha-dipole, a dark flow (observed and theoretically derived in my Double Torus equations) and a lowest value for the Newton-acceleration (experimentally detected and theoretically calculated by my Double Torus equations).

References.

[1] http://vixra.org/abs/1311.0121

[2] http://vixra.org/abs/1311.0152

[3] http://www.sciencemag.org/content/342/6161/1242856.